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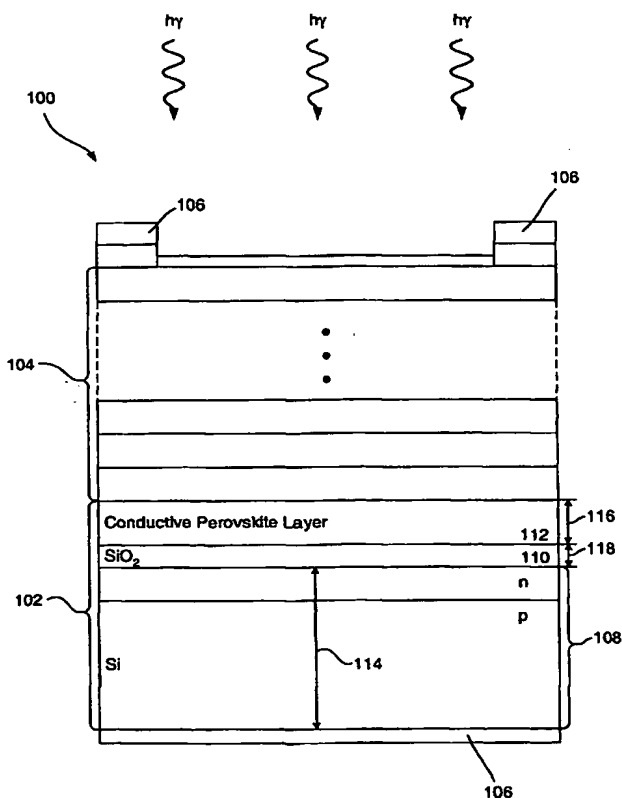
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- (71) Applicant (for all designated States except US): MID-WEST RESEARCH INSTITUTE [US/US]; 425 Volker Boulevard, Kansas City, MO 64110 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): MASCARENHAS, Angelo [US/US]; 2285 South Holman Circle, Lakewood, CO 80228 (US). SEONG, Maeng-Je [KR/US]; 12417 West 2nd Place, Apt. 18-307, Lakewood, CO 80228 (US).
- (74) Agents: WHITE, Paul, J. et al.; National Renewable Energy Laboratory, 1617 Cole Boulevard, Golden, CO 80401 (US).
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(54) Title: MULTI-JUNCTION, MONOLITHIC SOLAR CELL WITH ACTIVE SILICON SUBSTRATE



(57) **Abstract:** A monolithic multi-junction (tandem) photovoltaic (PV) device includes one or more PV subcells epitaxially formed on a compliant silicon substrate (102). The compliant silicon substrate (102) includes a base silicon layer (108), a conductive perovskite layer (112), and an oxide layer (110) interposed between the base silicon layer (108) and the conductive perovskite layer (112). A PV subcell is formed within the base silicon layer (108) of the conductive silicon substrate (102). The conductive perovskite layer (112) facilitates the conduction of charge carriers between the PV subcell formed in the compliant silicon substrate (102) and the one or more PV subcells formed on the compliant silicon substrate (102).

**Declarations under Rule 4.17:**

- as to the identity of the inventor (Rule 4.17(i)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ,

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